

Stars of Comparison.

				R.A.			N.P.D.	
				h	m	s	°	'
Nov. 24	B.A.C.	7167	Dec. 11	21	37	43	74	5
30	H.C.	40654	16	21	59	5	81	4
Dec. 28	H.C.	44612						

“The places of the catalogued stars are taken from the authority cited. The first and last observations were made with the wire micrometer and red illumination; the others with the bar micrometer, without illumination.

“On Nov. 24, 11^h 2^m 30^s, Greenwich M.T., the nucleus was close upon a fixed star, the place of which by two comparisons with B.A.C. 7167 was found to be—

R.A.	h	m	s	N.P.D.	h	m	s
.....	20	30	46.83	51	19	41.9

“The star was seen as before, but the comet appeared much fainter when near it.”

Elliptic Elements of Petersen's Second Comet. By T. H. Safford.

Per. Passage,	Jan.	19 ^d 35269	1849, Greenwich M. T.
Long. Per.		63° 14' 31"	
Node.....		215 13 1	
Inclin.		85 3 3	
Log. Per. Dist.		9.9821429	
Log. Eccentricity		9.9999210	
Log. Mean Dist.....		3.7219822	
Period		382801 years.	

From observations, Oct. 25th, Dec. 18th, 1848; and Jan. 22d, 1849.

Professor Schumacher writes,—“I have received from Dr. D'Arrest, now assistant at the Leipzig Observatory, his third elements of Dr. Petersen's Second Comet, they are corrected after his observations made on Jan. 8, 9, 12, viz. :—

	Leipzig M.T.			R.A.			Dec.		
	h	m	s	°	'	"	°	'	"
Jan. 8	4	57	59	346	39	44.6	16	23	48.4
9	5	38	43	347	19	3.7	17	14	51.5
12	6	11	56	349	16	42.8	19	45	44.5

“The elements of Dr. Petersen give the differences :—

	In R.A.	In Decl.
Jan. 8	—0.3	+52.6
9	—4.8	+39.2
12	+5.8	+56.1

“The second elements of Dr. D'Arrest,—

Jan. 8	+17.1	+6.7
9	+10.6	—11.0
12	+22.0	—4.6

“His third elements, which he considers as very accurate, are the following. There seems to him not the least indication of ellipticity yet given by the observations.

Time of Perihelion Passage, 1849, Jan. 19, 39001, Berlin M.T.

$$\left. \begin{array}{rcl} \pi & 63^{\circ} 14' 38''.0 \\ \Omega & 215^{\circ} 12' 50''.4 \\ i & 85^{\circ} 2' 50''.6 \end{array} \right\} \text{Mean Eq}^{\times}. 1849^{\circ} 0$$

Log. q 9.9821197
Motion Direct.

*Substance of the Lecture delivered by the Astronomer Royal on the large Reflecting Telescopes of the Earl of Rosse and Mr. Lassell, at the last November Meeting.**

The Astronomer Royal gave that evening an account of the large reflecting telescopes of the Earl of Rosse and Mr. Lassell, which he had personally examined in the course of the last summer.

Premising that the subject might be considered interesting to the Society on these two grounds, first, that the reflecting telescope is exclusively a British instrument in its invention and improvement, and almost exclusively so in its use; and, secondly, that it had been almost exclusively the instrument of amateurs—a circumstance which seemed to prove both the difficulty of constructing it and its great excellence when properly constructed,—the Astronomer Royal remarked that his account would consist in some measure of a statement of the differences between the processes of these two amateur constructors. These differences, he thought, would be found well worthy the attention of all who were engaged in or contemplated the construction of reflecting telescopes. It is certain that both systems of methods are successful; and it may be doubtful how far the differences are connected with the difference of dimensions of the telescopes: for in all that follows it must be borne in mind that Lord Rosse's largest telescopes are 6 feet in clear aperture and more than 50 feet in focal length, while Mr. Lassell's are 2 feet in clear aperture and about 20 feet in focal length; that the thicknesses of the specula are nearly in the same proportion as their diameters; and hence that the weights of the specula are nearly as 27 to 1 (that of Lord Rosse's being about four tons, and that of Mr. Lassell's being about three hundred-weight), a difference which in itself might be expected to require some difference of construction.

I. The first difference is in the constitution of the metal-mixture used for the speculum.

In Lord Rosse's specula the metal is purely a mixture of tin

* The Astronomer Royal has been kind enough to furnish this account at the urgent request of the Editor, though with great inconvenience to himself. The polishing apparatus of Lord Rosse is described in his paper, *Phil. Trans.* 1840, p. 515, and figured in plate xxi. The polishing apparatus of Mr. Lassell is figured in his memoir, which is ordered for publication. Fellows can see models of both, and of Lord Rosse's gigantic reflector, at the apartments of the Society.